

Figure 1

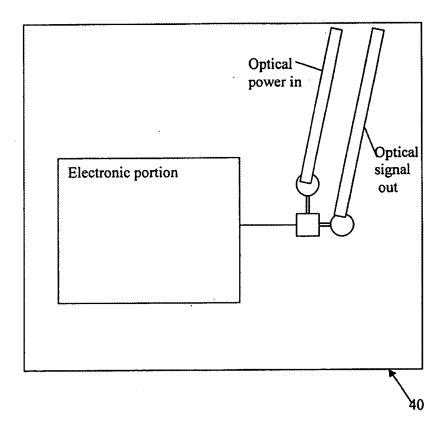


Figure 2a

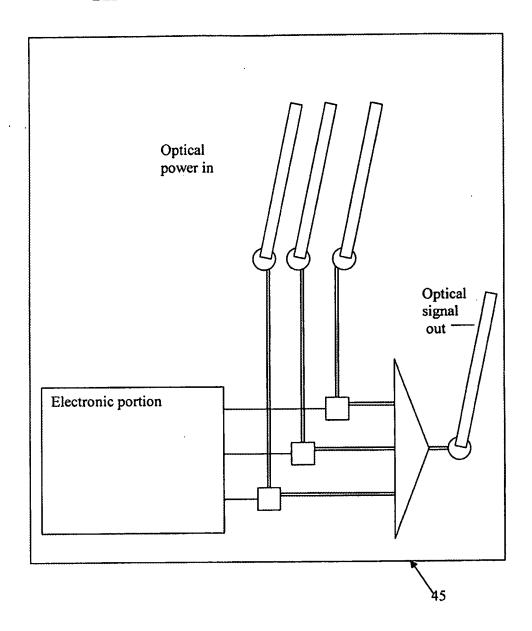


Figure 2b

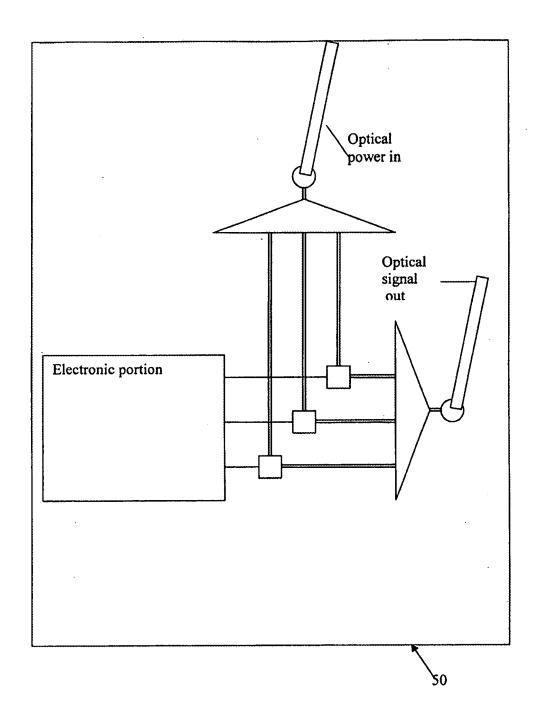


Figure 2c

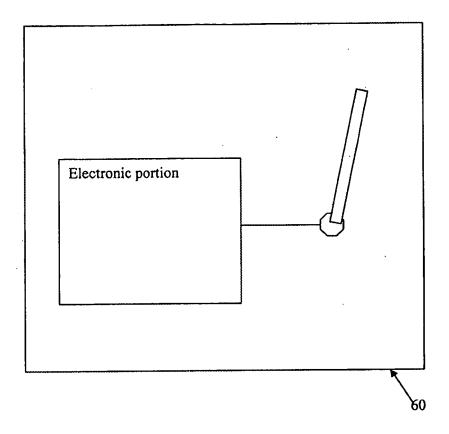


Figure 2d

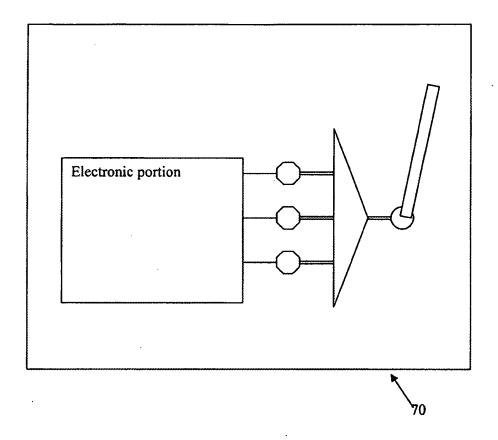


Figure 2e

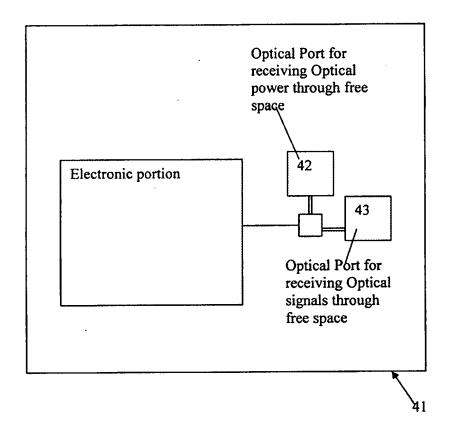


Figure 2f

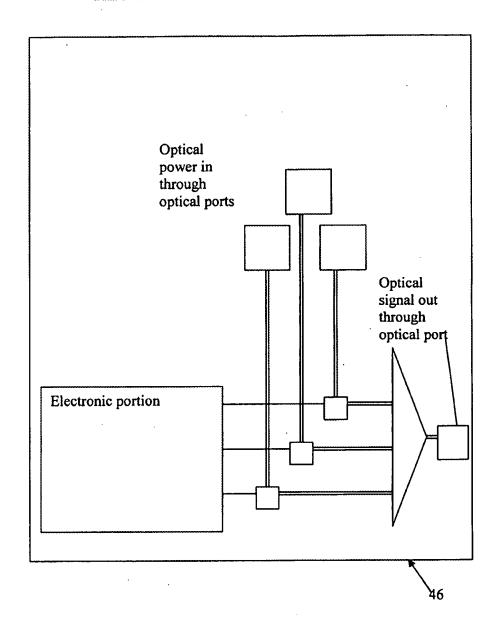


Figure 2g

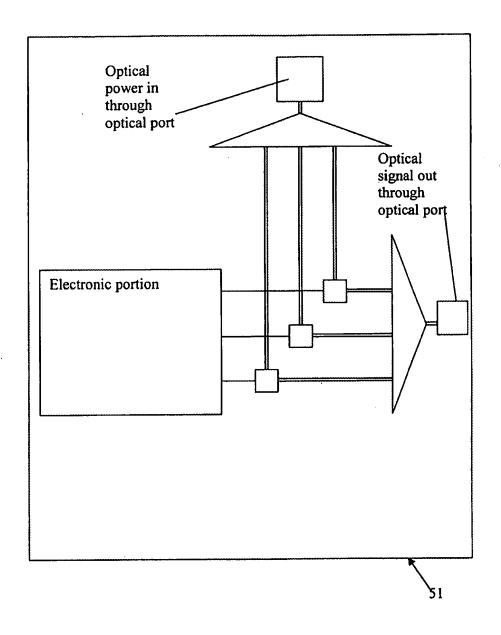


Figure 2h

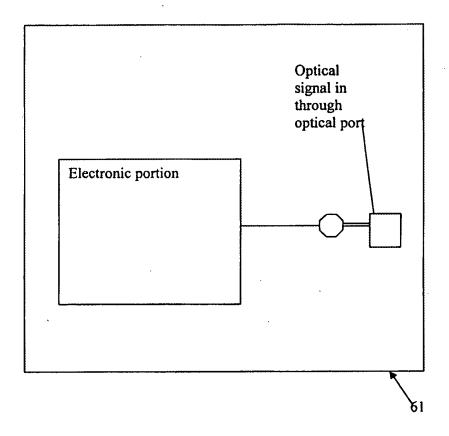


Figure 2i

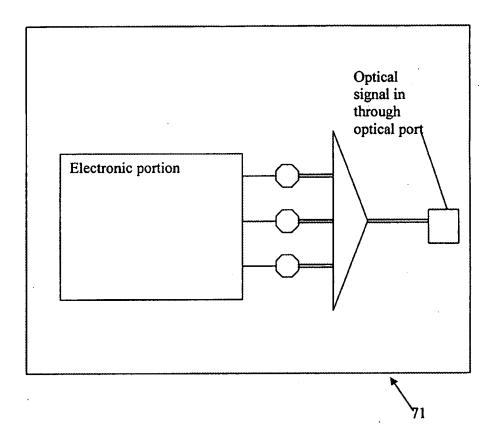


Figure 2j

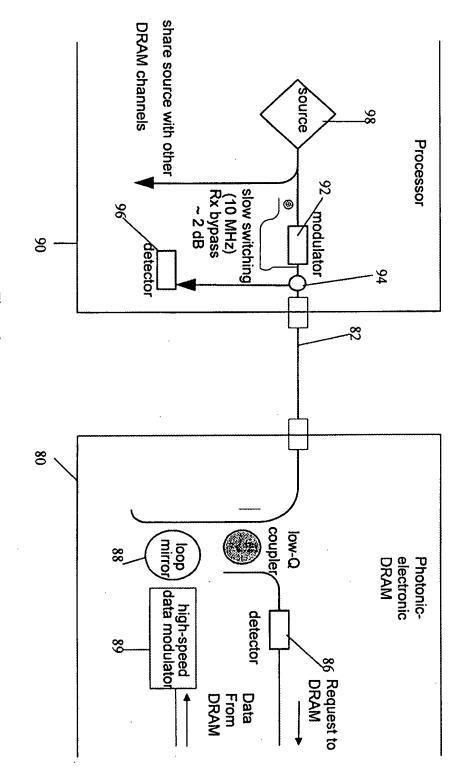


Figure 3

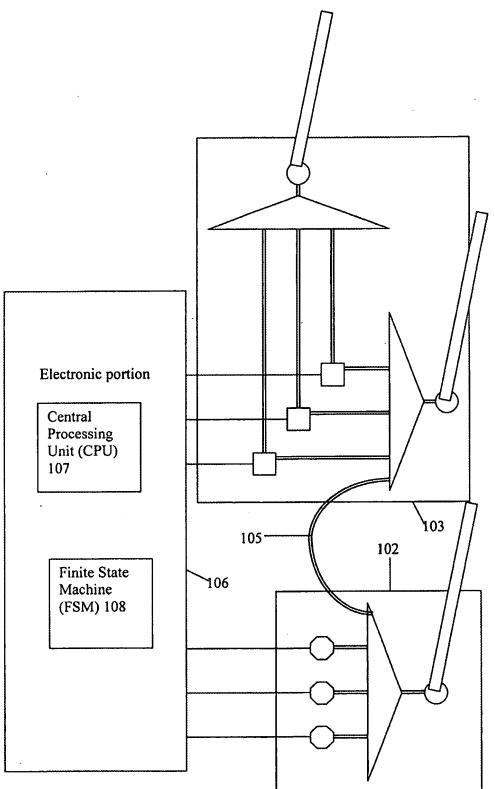


Figure 4

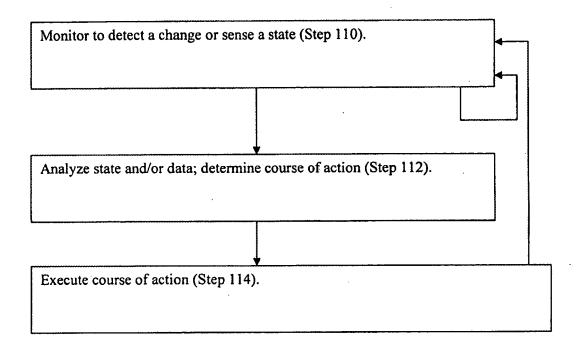


Figure 5

Optical signals representing one or more packets are received by the integrated electronic-photonic circuit (Step 120). Optical signals received on a passthrough wavelength for passthrough on the same wavelength are sent to a multiplexer for multiplexing and then on to an optical output port (Step 122). Optical signals received on a passthrough wavelength for passthrough to a different wavelength are sent to detectors, translated into electronic signals, sent to a modulator operating on the appropriate export wavelength, translated into optical signals, sent to a multiplexer for multiplexing and then on to an optical output port (Step 124). All other signals are submitted to the FSM where the packets and/or packet headers are examined (Step 126). Based on the packet properties, packet header content and/or state variables,

the packets may be routed to an on-chip destination or re-routed and injected into an optical network through the photonic interface and/or injected into an electronic network through an optional electronic interface (Step 128).

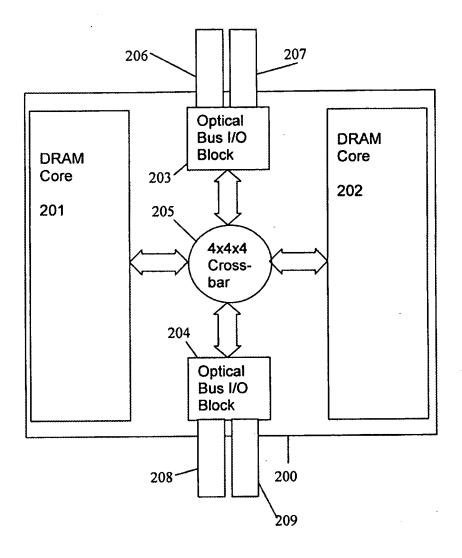


Figure 7

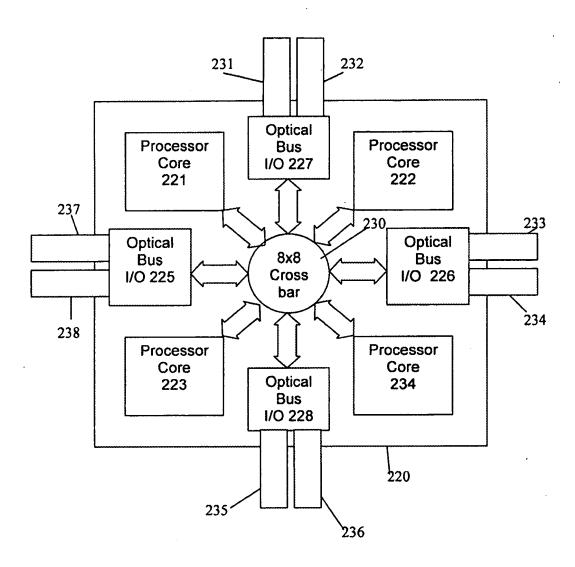
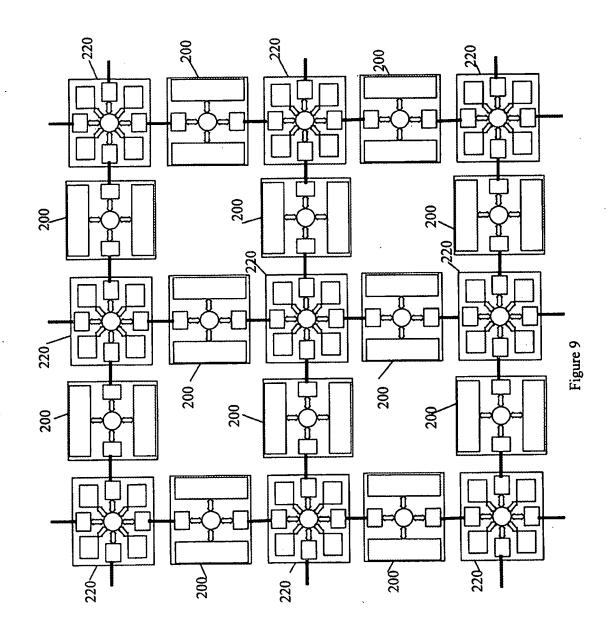
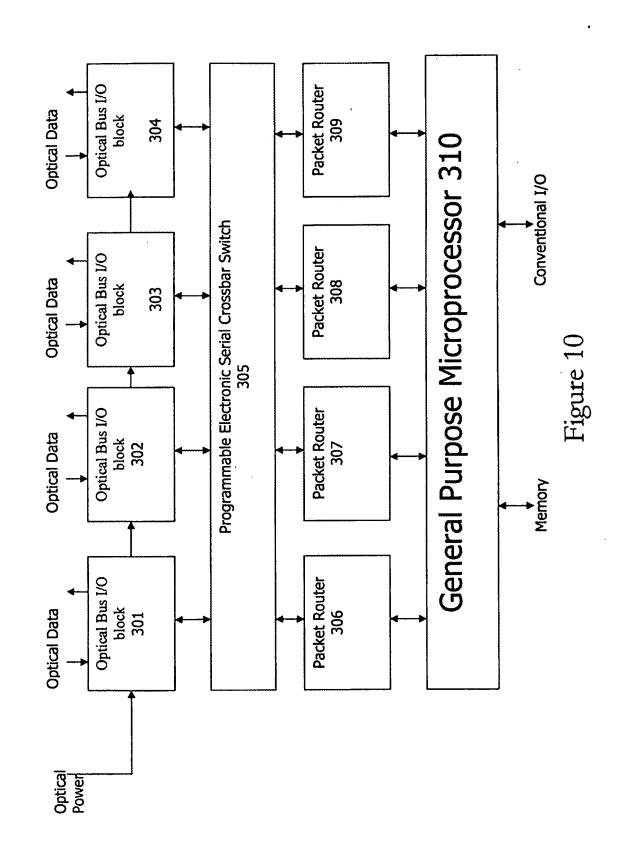


Figure 8





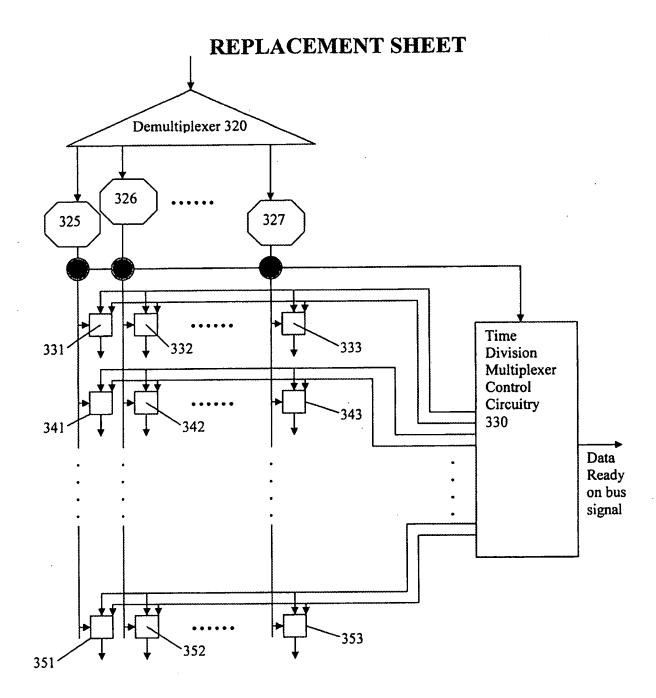


Figure 11a

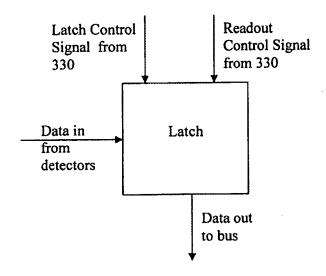


Figure 11b

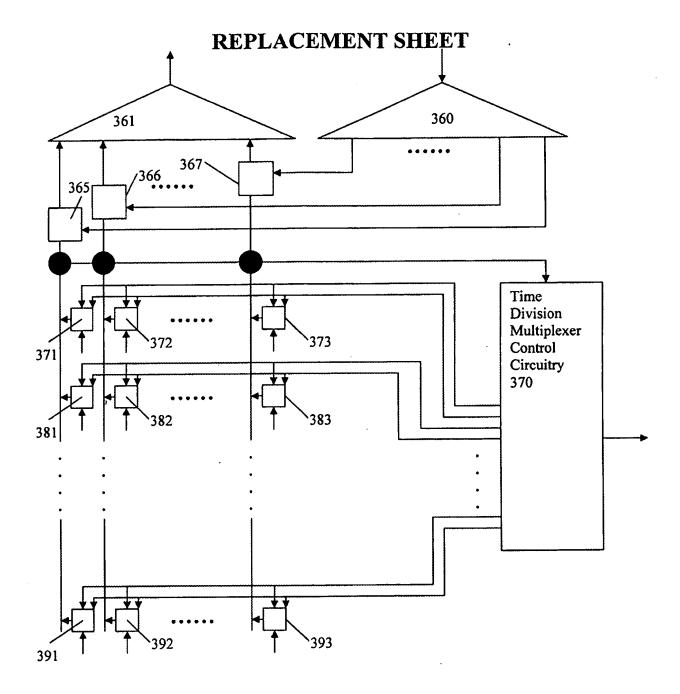


Figure 12a

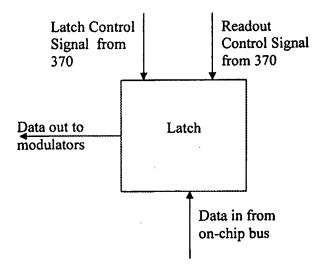


Figure 12b

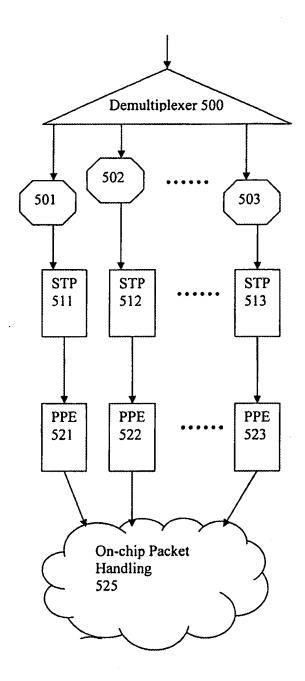


Figure 13

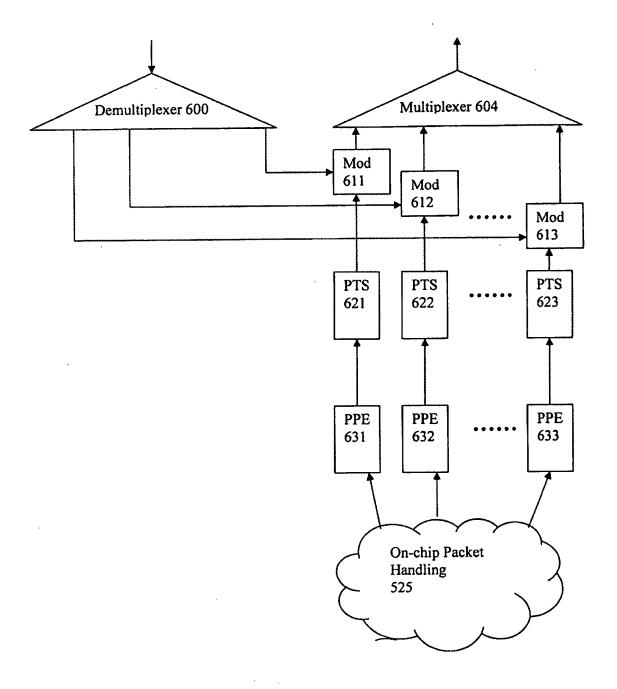


Figure 14

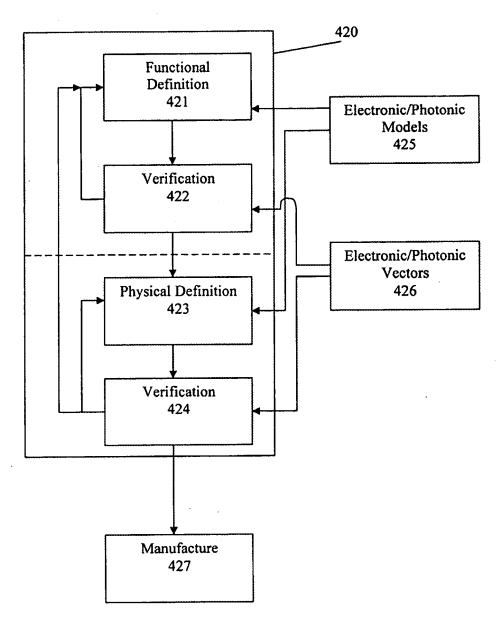


Figure 15